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MORTALITY AND SALE PATTERN OF SONADI SHEEP IN ITS NATIVE TRACTS

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ABSTRACT

The present study was conducted in four districts i.e. Udaipur, Chittorgarh, Rajsamand and Bhilwara from breeding tract of Sonadi sheep. The data on flock statistics of 6979 registered Sonadi sheep maintained by 147 shepherds of eight tehsils from four districts of Sonadi breeding tract were recorded. The overall mortality according to different seasons and age groups of Sonadi sheep was highest during summer (57.0%) as compared to winter (15.7%) and rainy (27.3%) seasons. Sonadi sheep belonging to age group of 1-3 month, 3-6month and adult, the frequency of mortality was highest during summer, while in case of sheep belonging to age group of above 6 months mortality was in rainy season. The maximum proportion sheep's were sold in the month of July in Udaipur and in the month of May in Chittorgarh districts. Higher proportion of sheep were sold during summer as compared to winter and rainy seasons, while the sheep's belonging to age group of 1-3 months, 3-6 months and adult were sold during summer season. The overall literacy rate had significant effect on all the parameters of land holding as well as buffalo, goat, total sheep, large ruminant, small ruminant and total livestock holding. The positive and significant association was observed between age of family head and total cattle, total other than Sonadi sheep and large ruminant population. The correlation of literacy rate with buffalo, goat, large ruminant and total livestock was found to be positive and significant.

Key words: Mortality, Native tract, Sale, Sheep.

Livestock sector is an important source of income for small farmers' families who are generally constrained due to non-availability of surplus land for cultivation. Moreover, livestock provide economic security and social status to the family. Large ruminant are less preferred by some of the community as well as landless and marginal farmers as it demands relatively large investment and higher maintenance cost. The role of small ruminants is more pronounced in the arid and semi-arid zone of country, where the risk and uncertainty of crop failure is high due to low availability of water and frequent natural vagaries likes drought Sheep rearing is an important source of income and occupation of small and marginal farmers in arid and semi arid region of Rajasthan. Sonadi breed of sheep is known for triple purpose *i.e.* milk, meat and wool. The area under grazing is reducing day by day due to deforestation and urbanization which resulted in poor reproductive performance of sheep because sheep is being reared on zero input system. The information with respect to mortality and sale pattern of Sonadi sheep reared in their breeding tract is scanty. Hence, an attempt was made to collect the information on mortality and sale pattern and its association with their variables in Sonadi sheep reared in their breeding tract.

MATERIALS AND METHODS

The major tract of Sonadi breed consists of Udaipur, Chittorgarh, Rajsamand and Dungarpur districts of Rajasthan, while the minor breeding tract consists of Bhilwara district of Rajasthan and part of north Gujarat[1]. The present study was conducted in four districts *i.e.* three districts namely Udaipur, Chittorgarh, Rajsamand from major and one Bhilwara from minor breeding tract

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of Sonadi sheep. The data on demographical and geographical distribution as well as livestock holding, flock statistics including addition due to birth and purchase and deduction due to death and sale were recorded on 6979 registered Sonadi sheep maintained by 147 shepherds of Sonadi breeding tract in the ad-hoc project entitled "Performance evaluation and characterization of Sonadi sheep in their native tract". The mortality and sale patterns were calculated is it according to age, months and season wise and appropriate statistical methods were used to analyse the data[6].

RESULTS AND DISCUSSION

The proportion of mortality was higher in adult sheep in all the districts except Rajsamand. The overall mortality pattern across different seasons and age group in Sonadi breeding tract are presented in Table-1. During winter season the maximum mortality (29.53%) was in adult sheep while minimum (4.02%) in sheep belonging to 3-6 month age group. During the summer season the minimum frequency of mortality was in 0-1 month of lamb while maximum both in 3-6 months and adult groups of sheep. In the rainy season the highest mortality was observed in adult sheep while lowest in 0-1 month's age group of lamb. Among sheep died in the age group of 0-1 month, maximum at 70.0 percent died during winter season. In the age group of 1-3 month, 3-6 month and adult group of sheep, the frequency of mortality was highest during summer while during rainy in the age group of above 6 months. The above results are in accordance with the findings of [7].

Higher mortality rate in adults may be due to under feeding of animals because draught prevailed in the tract. The situation during summer was very grim resulted higher mortality during summer. Among 0-1 months of age group, the mortality was higher during winter season which may be due to exposure to cold which resulted in pneumonia and pneumo-enteritis. Similar observations were reported by [2,5]. Further they also reported high mortality in kids due to enteritis followed by pneumonia.

Table 1. Overall mortality pattern across different seasons and age-groups

Seasons	Age-Groups					Overall
	0-1M	1-3M	3-6M	>6M	Adult	
Winter	28	39	6	32	44	
	18.8*	26.2*	4.0*	21.5*	29.5*	149
	70.0**	26.2**	2.5**	16.0**	13.7**	15.7**
Summer	5	97	183	71	183	
	0.9*	18.0*	4.0*	13.1*	34.0*	539
	12.5**	65.1**	76.3**	36.4**	56.8**	57.0**
Rainy	7	13	51	92	95	
	2.7*	5.0*	19.8*	35.7*	36.8*	258
	17.5**	8.7**	21.3**	47.2**	29.5**	27.3**
Overall	40	149	240	195	322	
	4.2*	15.8*	25.4*	20.6*	34.0*	946

** Percentage between age group within season, ** Percentage between season within age group*

The overall sale pattern across different season and age groups are presented in Table 2. During winter and summer seasons, maximum proportion of sheep sold in the age group of 3-6 months maximum proportion of sheep's belonging to age group of above six months were sold in rainy season. The results are in agreement with the findings of [3, 4].

Among sheep sold between age group of 0-1 month and above 6 months, the maximum proportion of sheep's sold during rainy seasons while the sheep's belonging to age group of 1-3 months, 3-6 months and adult were sold during summer season.

Table 2. Overall sale patterns across different seasons and age-group

Seasons	Different age groups					Overall
	0-1 M	1-3 M	3-6 M	> 6 M	Adult	
Winter	1 (0.7)*	19 (12.7)*	52 (34.7)*	35 (23.3)*	43 (28.6)*	150
	(7.1)**	(23.7)**	(10.8)**	(6.9)**	(10.1)**	(9.9)
Summer	4 (0.4)*	48 (5.4)*	366 (41.4)*	190 (21.5)*	276 (31.2)*	884
	(28.6)**	(60.0)**	(75.6)**	(37.5)**	(65.1)**	(58.6)
Rainy	9 (1.9)*	13 (2.7)*	66 (13.9) *	282(59.4)*	105 (22.1)*	475
	(64.3)**	(16.3)**	(13.6) **	(55.6)**	(24.8)**	(31.5)
Overall	14 (0.9)	80 (5.3)	484 (32.1)	507 (33.6)	424 (28.1)	1509

** Percentage between age group within season. **Percentage between season group within age group.*

The correlation coefficients between different variables with livestock holding are shown in Table 3. The positive and significant association were observed between age of family head and total cattle, other than Sonadi sheep and large ruminant population. The results indicated that older shepherds were interested to rear cattle for production of bullock for cultivation while liking of Sonadi sheep reduced in the area as evident from increasing population of sheep of other breeds. The correlation of literacy rate with buffalo, goat, large ruminant and total livestock holding were found to be positive and significant, indicating that literate farmers are shifting from cattle to buffalo and sheep to goat because these species are more economical than cattle and sheep.

Table 3. Correlation coefficients of different variables with livestock holding parameters

Parameters	Total numbers of animals								
	Buffalo	Cattle	Goat	Sonadi	Other sheep	Sheep	Large Ruminants	Small Ruminants	Total livestock
Age	0.044	0.125**	-0.108-	0.004	0.108*	0.087	0.105*	0.037	0.048
Literacy rate	0.105*	0.060	0.112*	0.052	0.022	0.057	0.102*	0.093	0.102*
Total land	0.464**	0.367**	0.098*	-0.029	0.100*	0.005	0.514**	0.085	0.143**
Uncultivated land	0.461**	373**	-0.015	-0.045	0.116*	0.055	0.516**	0.044	0.103*
Cultivated land	0.388**	300**	0.167**	-0.012	0.071	0.046	0.426**	0.103*	0.150**

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